

U.S. Patent Application Serial No. 10/607,083
Response filed September 10, 2004
Reply to OA dated June 17, 2004

REMARKS

Claims 1 - 12 are currently pending in this patent application. Claims 1 and 12 have been amended in order to more particularly point out, and distinctly claim the subject matter to which the applicants regard as their invention. The applicants respectfully submit that no new matter has been added. It is believed that this Amendment is fully responsive to the Office Action dated June 17, 2004.

With respect to the Examiner's comments on certain informalities in the language of claims 11 and 12, as set forth in item 1, page 2 of the outstanding Action, first, there will be no redundancy or repetition in the language of claim 12 with the language of claims 1, 2 and 11, as suggested by the Examiner, in view of the amendment to independent claim 1 (as more fully discussed below).

Secondly, as to claim 12, the applicants have deleted from independent claim 12 the repeated clause, which regrettably have been inadvertently added or repeated.

Accordingly, the withdrawal of the outstanding objections to claims 11 and 12 is in order, and is therefore respectfully solicited.

As to the merits of this case, the Examiner maintains his reliance on the "Applicant's prior art (APA) figs. 37 and 38," and sets forth the following rejections:

1) claims 1 - 4 and 6 - 8 stand rejected under 35 USC §102(a) as being anticipated by "(APA) figs. 37 and 38"; and

2) claims 5 and 9 stand rejected under 35 USC §103(a) based on "(APA) figs. 37 and 38."

The applicants respectfully request reconsideration of these rejections.

In the last Amendment filed for this case, the applicants took the position that as discussed in, for example, lines 3 - 10, page 26 of the applicants' specification with respect to the APA, the low concentration layer 112 "serves as a partition between both ends of the active groove[s 122] and the ring-shaped groove [130]," as also illustrated in the applicants' Figure 37. This results in the condition of epitaxial growth being different on both ends of the active groove from that in the central portion. As further specifically suggested in lines 7 - 10, page 26 of the applicants' specification: "[t]he speed of the epitaxial growth is actually slow on both ends of the active groove, resulting in both ends of the active groove incompletely filled with a semiconductor filler."

On the other hand, in the applicants' invention, in order to avoid the partitioning by a low concentration layer 12 of both ends of the active grooves 22 and the inner circumferential groove 30, such active grooves 22 and such inner circumferential groove 30 are connected. Such structural arrangement is clearly illustrated in, e.g., the applicants' Figures 1 and 4.

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In other words, the applicants highlighted the following distinguishable claimed structural arrangement set forth in independent claim 1: "both ends of each of the active grooves are connected to the inner circumferential groove."

In response, the Examiner maintains his specific reliance on the prior art discussed in the applicants' specification because, according to the Examiner:

both ends of the active grooves (122₁-122₄) are indirectly connected to the inner circumferential groove 130 by the low concentration layer 112.^{1/}

Emphasis added.

It is clear that the applicants' claimed semiconductor device includes both ends of each of the active grooves being directly or physically connected to the claimed inner circumferential groove; and as clearly explained in lines 13 - 15, page 26 of the applicants' original specification, "are not partitioned by the low concentration layer 12." The advantages or benefits derived from such distinguishable claimed structural arrangements are clearly not taught in the cited prior art.

Accordingly, based on the above-discussed position taken by the Examiner, the applicants have further amended independent claim 1 so as to more particularly recite that both ends of each

^{1/} See, lines 7 - 9, page 3 of the outstanding Action.

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of the claimed active grooves are “directly connected” to the claimed inner circumferential groove.”

In view of the above, the applicants respectfully submit that not all of the applicants’ claimed elements are found in exactly the same situation and united in the same way to perform the identical function in the “(APA) figs. 37 and 38.” As such, there can be no anticipation under 35 USC §102(a) of the applicants’ claimed invention based on the teachings of the “(APA) figs. 37 and 38.”

Accordingly, the withdrawal of the outstanding anticipation rejection under 35 USC §102(a) based on the teachings of the “(APA) figs. 37 and 38” is in order, and is therefore respectfully solicited.

Furthermore, based on the applicants’ claim amendments and arguments in support thereof (including the benefits or advantages derived therefrom), as discussed above, a person of ordinary skill in the art would not have found the applicants’ claimed invention obvious under 35 USC §103 based on the “(APA) figs. 37 and 38.” Accordingly, the withdrawal of the outstanding obviousness rejection under 35 USC §103 based on the “(APA) figs. 37 and 38” is in order, and is therefore respectfully solicited.

In view of the aforementioned amendments and accompanying remarks, claims, as amended, are in condition for allowance, which action, at an early date, is requested.

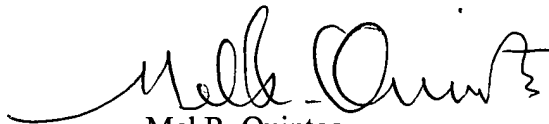
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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned attorney at the telephone number indicated below in order to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, KRATZ, QUINTOS,
HANSON & BROOKS, LLP



Mel R. Quintos
Attorney for Applicants
Reg. No. 31,898

MRQ/lrj/ipc

Atty. Docket No. **030781**
Suite 1000
1725 K Street, N.W.
Washington, D.C. 20006
(202) 659-2930



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